EP 0 737 395 A2

FIG. 1

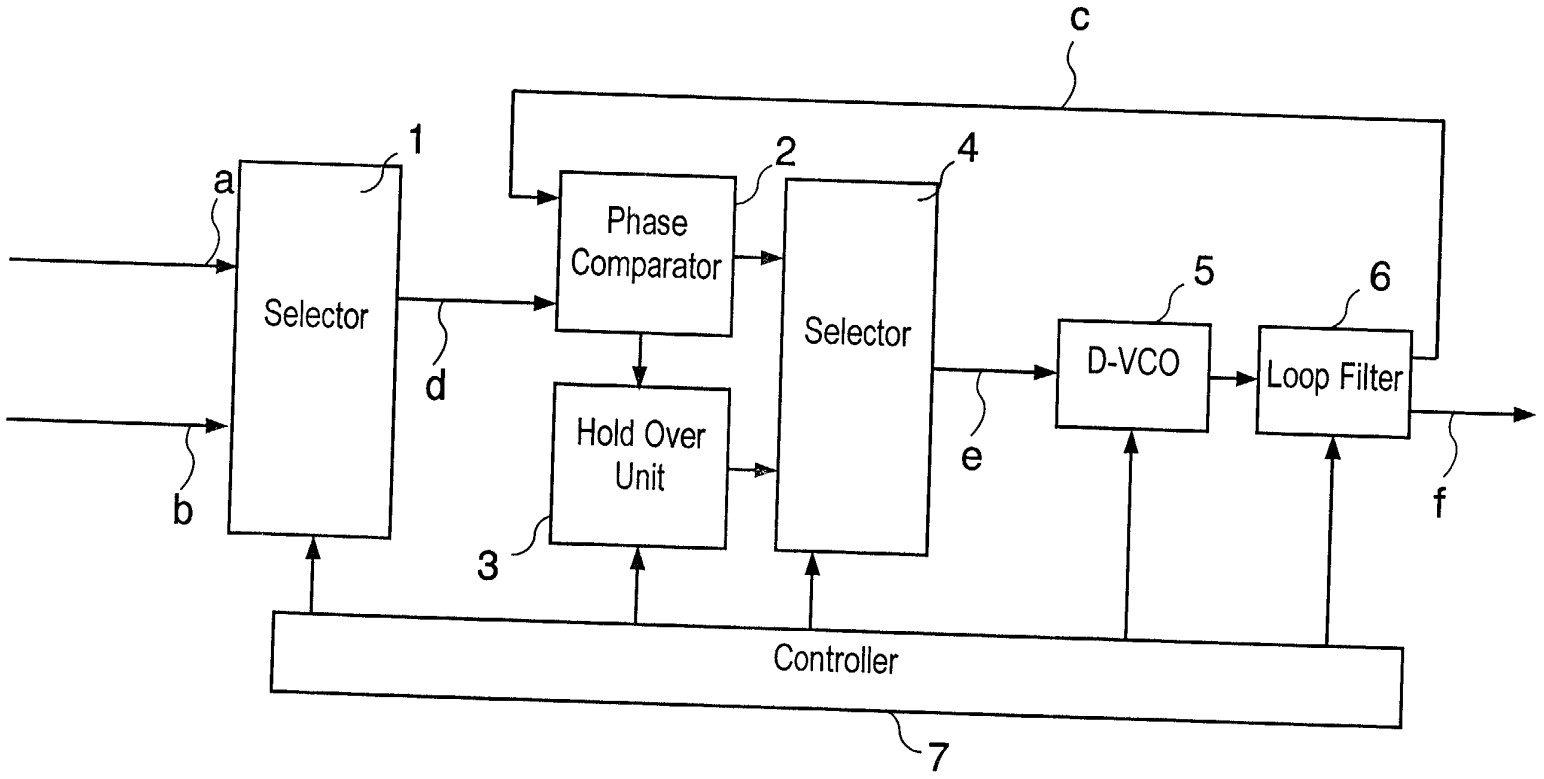

FIG. 2

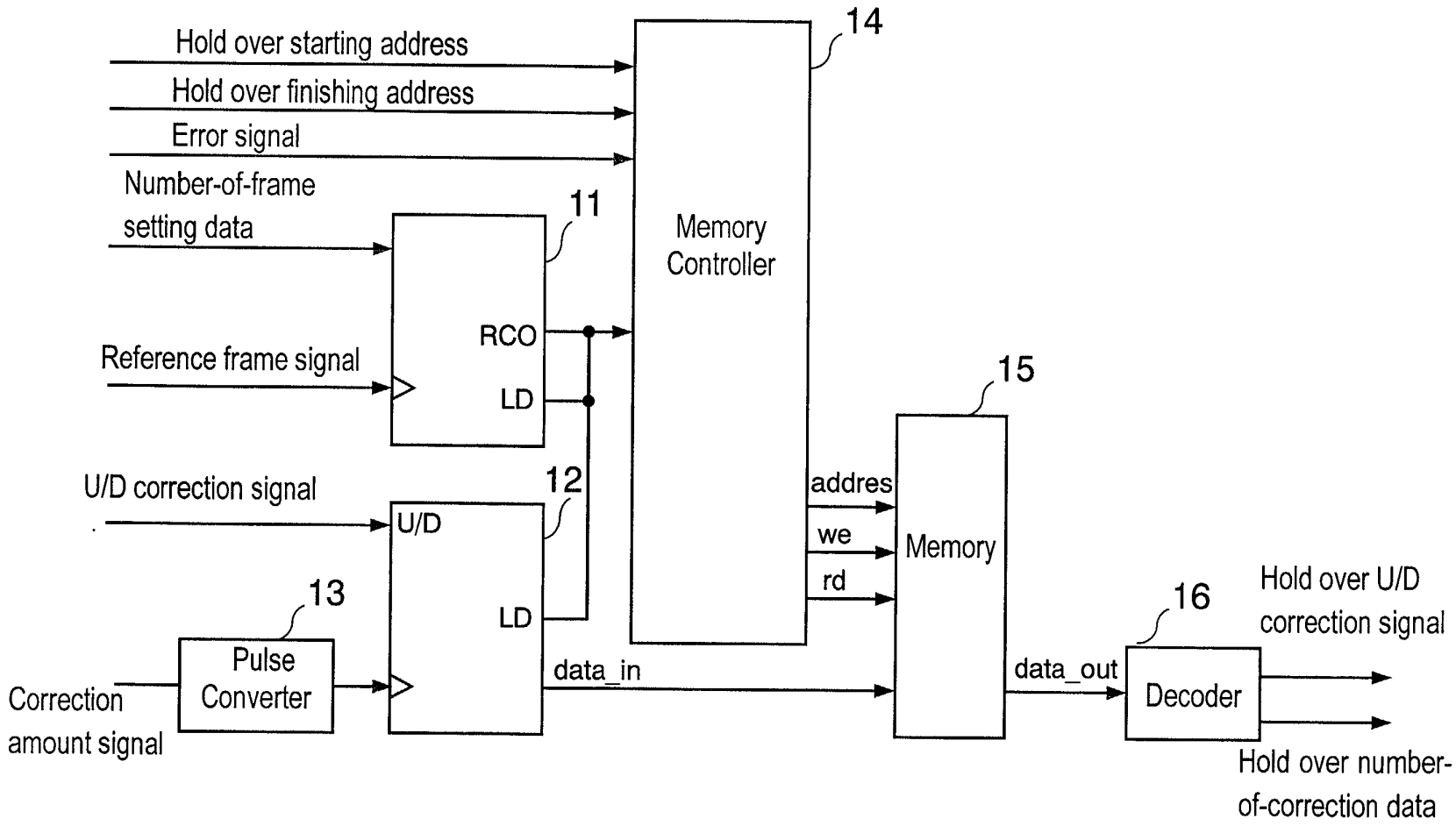
Hold over starting address
Hold over finishing address
Error signal
Number-of-frame setting data
Reference frame signal
U/D correction signal
Correction amount signal
Pulse Converter
13
11
12
14
15
16
RCO
LD
U/D
LD
Memory Controller
addres
we
rd
Memory
data_in
data_out
Decoder
Hold over U/D correction signal
Hold over number-of-correction data

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FIG. 3

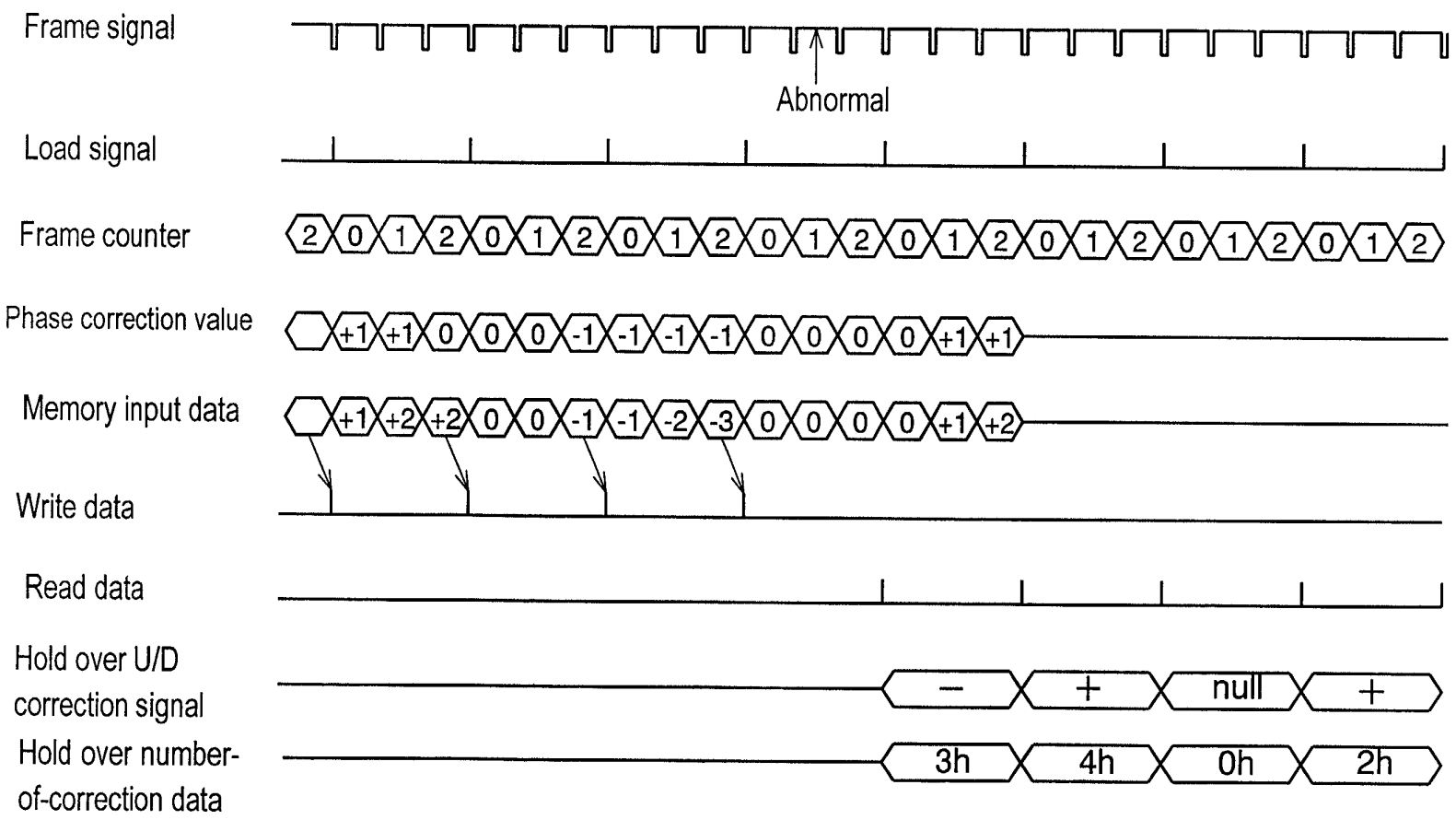


FIG. 4

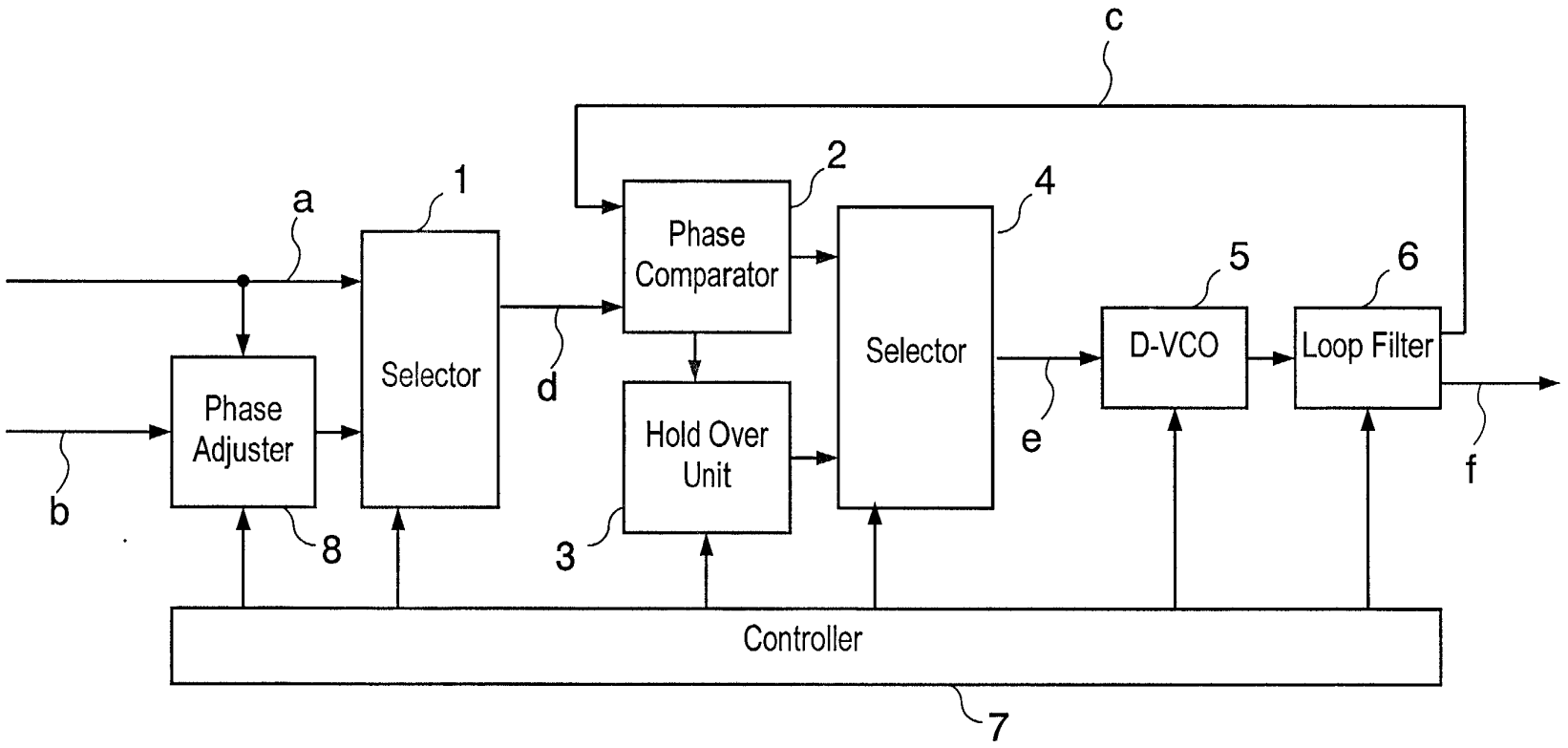

c
a
1
2
4
5
6
Phase Comparator
Selector
Selector
D-VCO
Loop Filter
Phase Adjuster
Hold Over Unit
b
d
e
f
8
3
Controller
7

FIG. 5

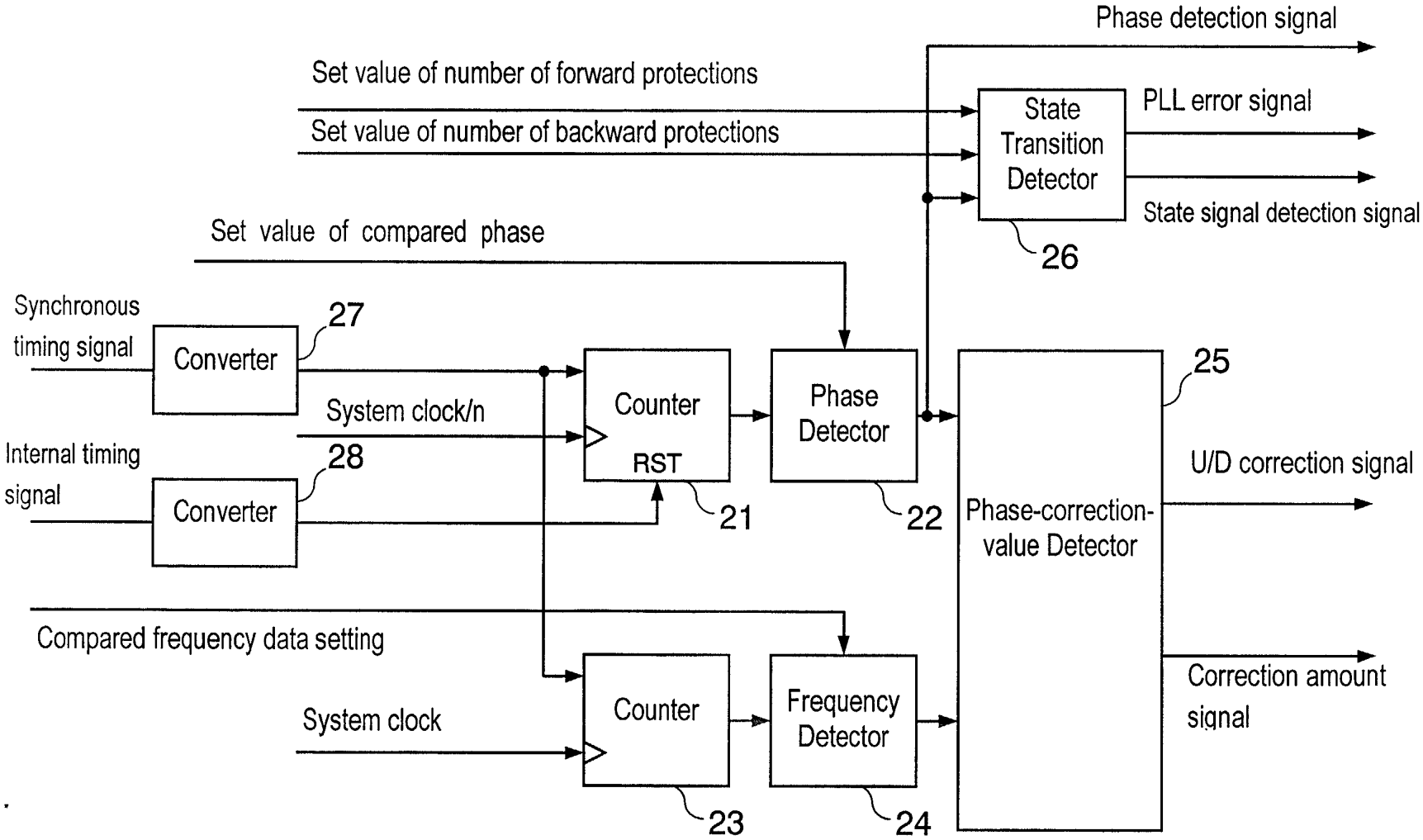

Phase detection signal
Set value of number of forward protections
Set value of number of backward protections
State Transition Detector
PLL error signal
State signal detection signal
26
Set value of compared phase
Synchronous timing signal
Converter
27
System clock/n
Internal timing signal
Converter
28
Counter
RST
21
Phase Detector
22
25
Phase-correction-value Detector
U/D correction signal
Compared frequency data setting
System clock
Counter
23
Frequency Detector
24
Correction amount signal

FIG. 6

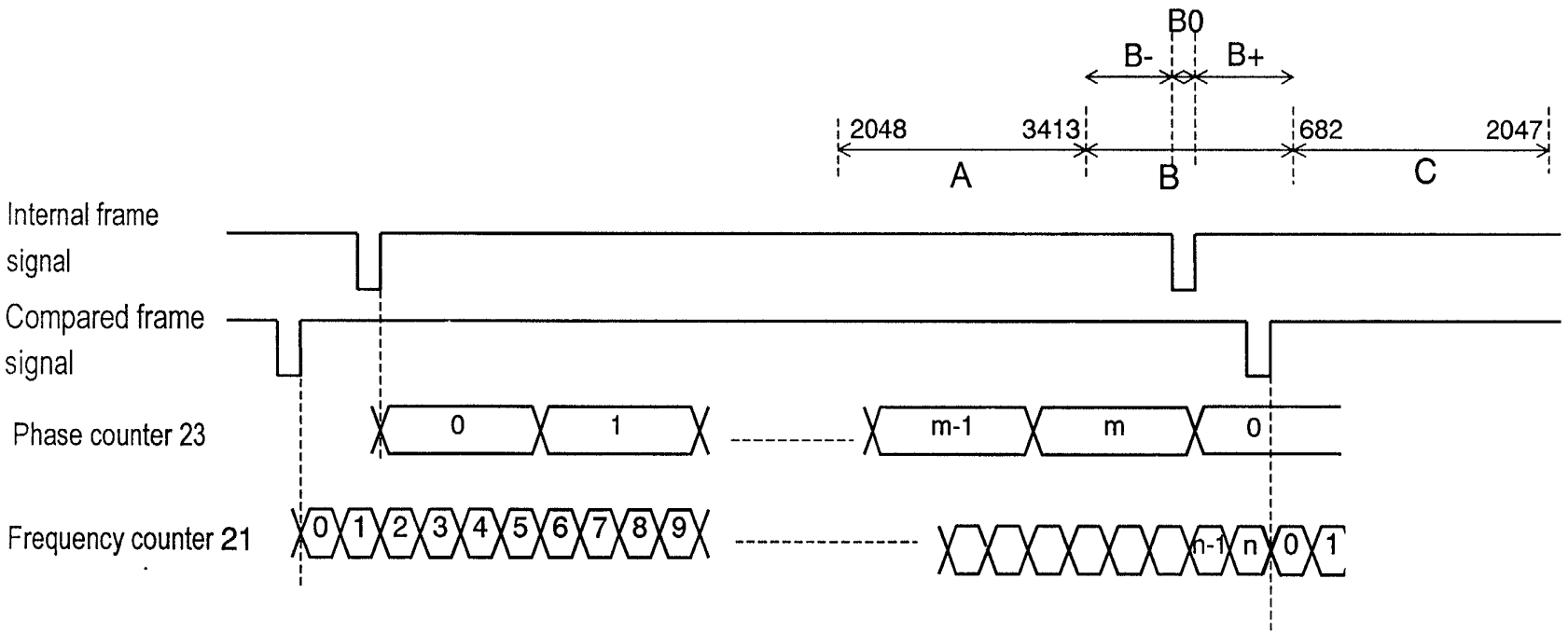
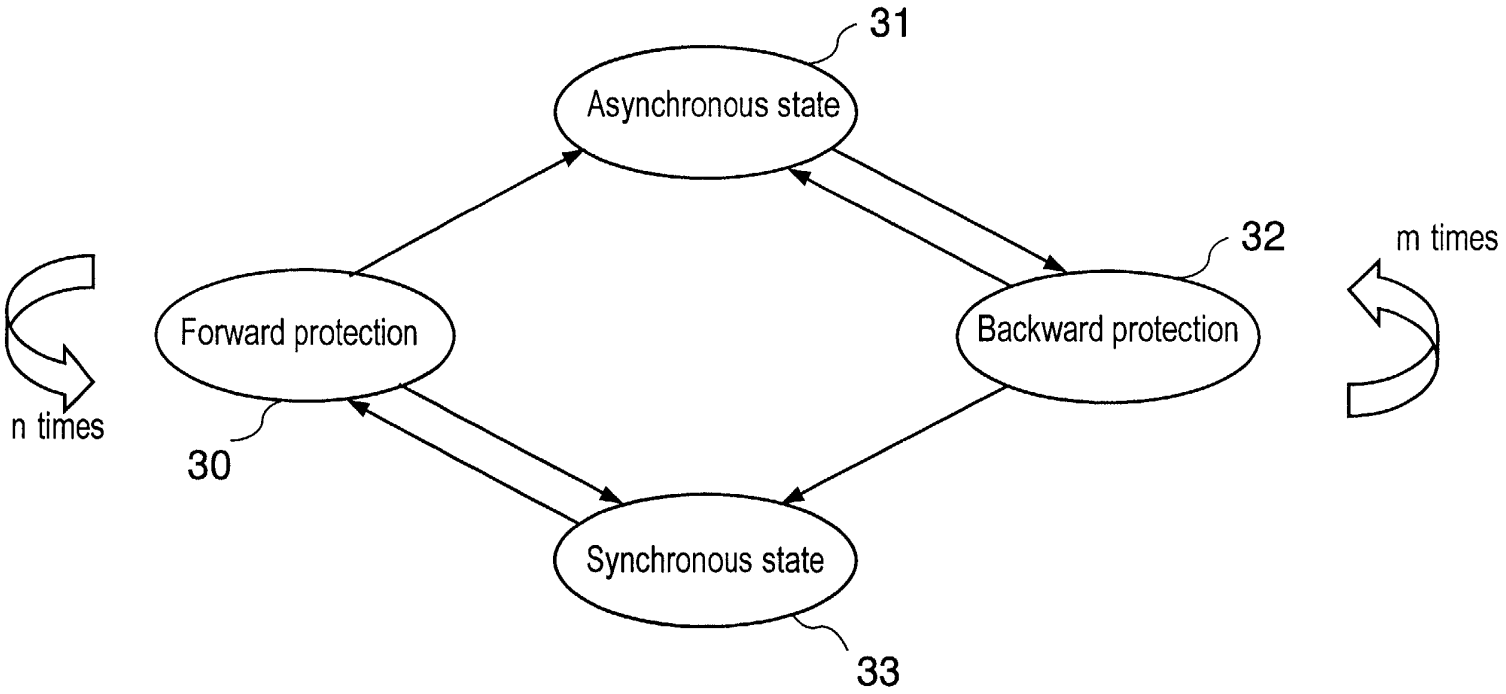

B0
B-
B+
2048
3413
682
2047
A
B
C
Internal frame signal
Compared frame signal
Phase counter 23
0
1
m-1
m
0
Frequency counter 21
0 1 2 3 4 5 6 7 8 9
n-1
n
0
1

FIG. 7


31
Asynchronous state
32
m times
Forward protection
Backward protection
n times
30
Synchronous state
33

patent-pending

FIG. 8

Phase detector 22 (Count value)		Frequency detector 24 (Count value)	Phase-correction-value Detector 25	Supplemental remarks	Determination
A (2048~3413)		—	Minus correction	No-correction during forward protection state	Asynchronous
B	B− (3414~4094)	≥16384	non correction		Synchronous
		=16383	Minus correction		
		≤16382	Minus correction		
	BO (4095)	≥16384	Plus correction		
		=16383	non correction		
		≤16382	Minus correction		
	B+ (0~681)	≥16384	Plus correction		
		=16383	Plus correction		
		≤16382	non correction		
C (682~2047)		—	Plus correction	No-correction during forward protection state	Asynchronous

Patent Searched

FIG. 9

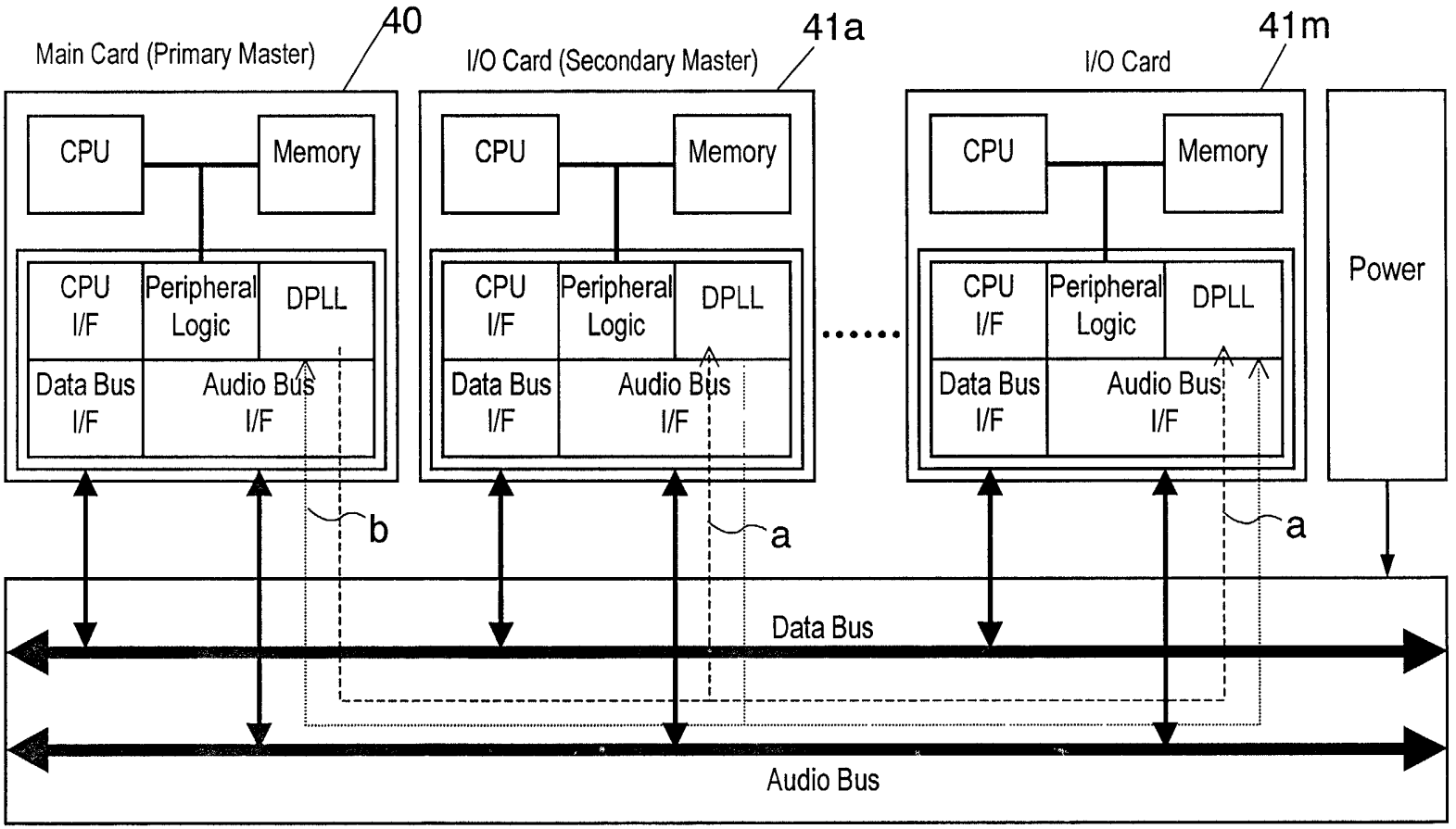
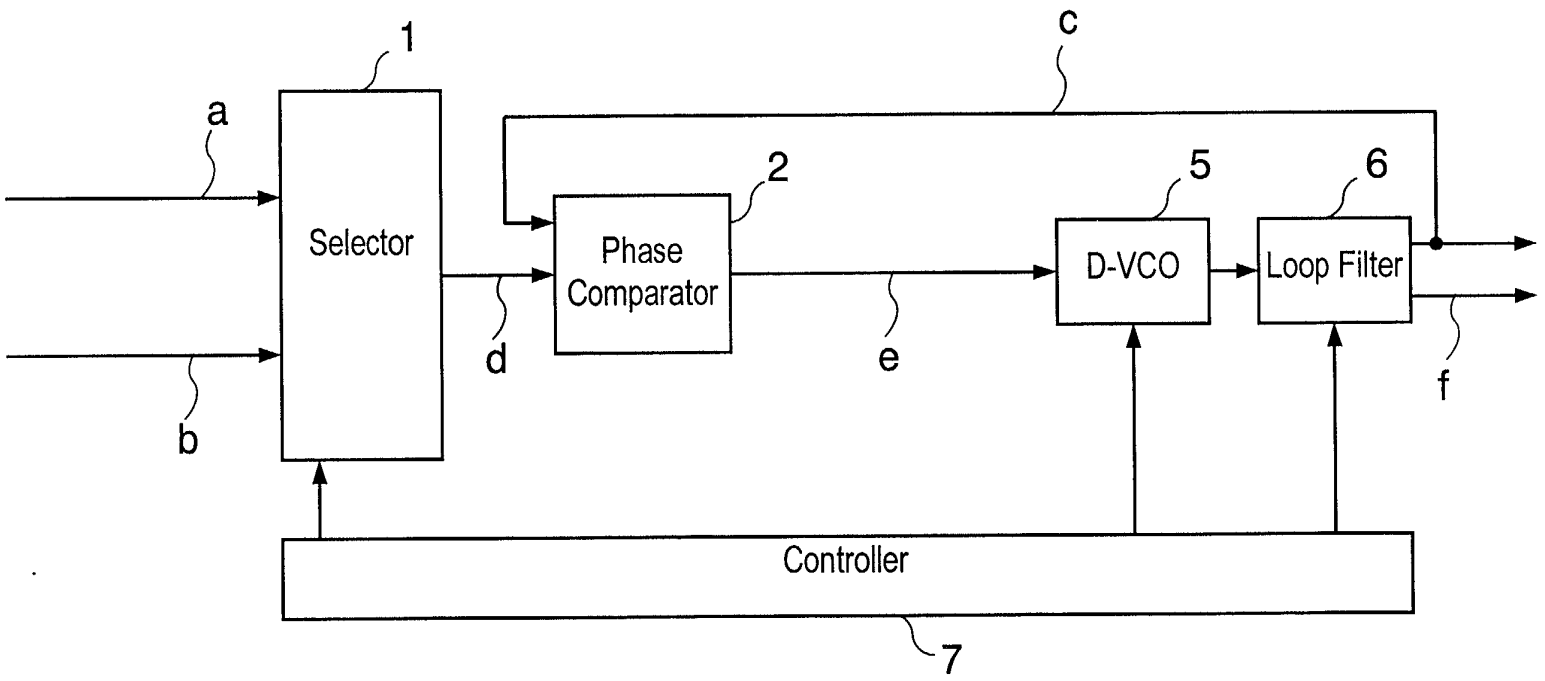


FIG. 10


1
c
a
Selector
2
5
6
Phase
Comparator
D-VCO
Loop Filter
d
e
f
b
Controller
7